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SHORTER NOTES

RELATION OF SUNSHINE TO THE HABITAT OF *Rottboellia exaltata* (Poaceae)—In the Philippine Islands *Rottboellia exaltata* is a good example of a plant, which although relatively intolerant, does not long survive full sunshine. Because it grows throughout the year, the consequences of this relation become conspicuous at certain seasons. At the borders of woodlands and in the edges of thickets *Rottboellia* grows luxuriantly all the year round. Within woods and thickets however it is not present. *Rottboellia* is a weed common to corn and rice fields. When the land lies after the harvest, *Rottboellia* frequently becomes entirely dominant. This takes place in the latter part of the rainy season when there is a high percentage of cloudiness. The luxuriant growth reaches an average height of six feet in the open but at the edge of woods it is somewhat higher and more spindling.

As the amount of sunlight increases with the approaching dry season, a great change takes place. Gradually the grass growing in the full sun dries up and falls over, resulting in the reduction of the height of the vegetation from that of *Rottboellia* (6 feet) to that of the plants heretofore growing beneath it, for example, *Mimosa pudica* (1 foot). Meanwhile plants of *Rottboellia* in the partial shade of the edge of thickets continue to develop and flower throughout the dry season. If, however, the partial shade be removed, the *Rottboellia* plants dry up and fall over.

Thus we have in *Rottboellia exaltata* an example of a plant whose habitat in the dry season is restricted to partial shade on account of its inability to withstand full sunshine.

F. C. GATES.

DOUGLAS LAKE, MICHIGAN,
August, 1915.

REVIEWS

Dixon's Transpiration and the Ascent of Sap in Plants*

For over seventeen years botanists have been familiar with Prof. Dixon's papers, embodying the results of his scholarly investigations on the subject of transpiration and the ascent of

* Dixon, Henry H. Transpiration and the ascent of sap in plants. pp. i-vi and 1-216. figs. 1-30. Macmillan & Co. London, 1914. \$1.40 net.